## CLAIMS

1. A light emitting device comprising:

two differently doped semiconductor materials defining a light generating region;

at least one n+ layer formed upon at least one of the two semiconductor materials; and

a current spreading layer formed upon the n+ layer.

2. A light emitting device comprising:

an n-type layer;

a p-type layer cooperating with the n-type layer to form a light generating region;

at least one n+ layer formed upon at least one of the n-type layer and the p-type layer; and

at least one current spreading layer formed upon the n+ layer.

3. The light emitting device as recited in claim 2, further comprising a substrate upon which at least one of the n-type layer and the p-type layer are formed.

4. The light emitting device as recited in claim 2, wherein the n+ layer is formed upon the p-type layer and further comprising a substrate upon which the n-type layer is formed.

5. The light emitting device as recited in claim 2, wherein the n+ layer is formed upon the n-type layer and further comprising a substrate upon which the p-type layer is formed.

6. The light emitting device as recited in claim 2, wherein the n-type layer and the p-type layer comprise AlInGaN.

7. The light emitting device as recited in claim 2, wherein the n+ layer comprises GaN.

8. The light emitting device as recited in claim 2, wherein the current spreading layer comprises a conductive oxide layer.

9. The light emitting device as recited in claim 2, wherein the current spreading layer comprises an indium tin oxide layer.

10. The light emitting device as recited in claim 2, wherein the current spreading layer comprises a material selected from the group consisting of:

$InO_X$,

Indium Tin Oxide; and

$SnO_X$.

11. The light emitting device as recited in claim 2, wherein the current spreading layer comprises a zinc oxide layer.

12. The light emitting device as recited in claim 2, wherein the current spreading layer comprises a material selected from the group consisting of:

ZnO;

ZnGaO; and

ZnAlO.

13. The light emitting device as recited in claim 2, wherein the current spreading layer and the n+ layer are substantially transparent to at least one wavelength of visible light.

14. The light emitting device as recited in claim 2, wherein the sheet resistivity of the current spreading layer is less than approximately 200 ohm/sq.

15. The light emitting device as recited in claim 2, wherein the sheet resistivity of the current spreading layer is between approximately 10 ohms/$cm^2$ and approximately 200 ohm/sq.

16. The light emitting device as recited in claim 2, wherein a thickness of the n+ layer is less than approximately 100 angstroms.

17. The light emitting device as recited in claim 2, wherein a doping concentration of the n+ is greater than $10^{19}$ $cm^{-3}$

18. The light emitting device as recited in claim 2, wherein the conductive oxide layer is in ohmic contact with at least one of the n-layer and an $n^+$-layer.

19. The light emitting device as recited in claim 2, wherein the n+ layer cooperates with at least one of the n-type layer and the p-type layer to define a tunneling diode.

20. The light emitting device as recited in claim 2, wherein a thickness of the oxide layer is an integer number of T, where T is 0.25 $\lambda$ nm/ $n_{oxide}$, $\lambda$ is the emitting wavelength of the light generated from the light emitting device, and $n_{oxide}$ is the refractive index of the oxide material.

21. A method for forming a light emitting device, the method comprising:

forming a light generating region from two differently doped semiconductor materials;

forming at least one n+ layer upon at least one of the two semiconductor materials; and

forming a current spreading layer upon the n+ layer.

22. A method for forming a light emitting device, the method comprising:

forming an n-type layer and a p-type layer in a manner such that they cooperate with one another to define a light generating region;

forming at least one n+ layer upon at least one of the n-type layer and the p-type layer; and

forming at least one current spreading layer upon the n+ layer.

23. The method as recited in claim 22, wherein at least one of the n-type layer and the p-type layer are formed upon a substrate.

24. The method as recited in claim 22, wherein the n+ layer is formed upon the p-type layer and wherein the n-type layer is formed upon a substrate.

25. The method as recited in claim 22, wherein the n+ layer is formed upon the n-type layer and wherein the p-type layer is formed upon a substrate.

26. The method as recited in claim 22, wherein the n-type layer and the p-type layer comprise AlInGaN.

27. The method as recited in claim 22, wherein the n+ layer comprises GaN.

28. The method as recited in claim 22, wherein the current spreading layer comprises a conductive oxide layer.

29. The method as recited in claim 22, wherein the current spreading layer comprises an indium tin oxide layer.

30. The method as recited in claim 22, wherein the current spreading layer comprises a material selected from the group consisting of:

$InO_X$,

Indium Tin Oxide; and

$SnO_X$.

31. The method as recited in claim 22, wherein the current spreading layer comprises a zinc oxide layer.

32. The method as recited in claim 22, wherein the current spreading layer comprises a material selected from the group consisting of:

ZnO;

ZnGaO; and

ZnAlO.

33. The method as recited in claim 22, wherein the current spreading layer and the n+ layer are substantially transparent to at least one wavelength of visible light.

34. The method as recited in claim 22, wherein the sheet resistivity of the current spreading layer is less than approximately 200 ohm/sq.

35. The method as recited in claim 22, wherein the sheet resistivity of the current spreading layer is between approximately 10 ohms/cm$^2$ and approximately 200 ohm/sq.

36. The method as recited in claim 22, wherein a thickness of the n+ layer is less than approximately 100 angstroms.

37. The method as recited in claim 22, wherein a doping concentration of the n+ is greater than $10^{19}$ $cm^{-3}$

38. The method as recited in claim 22, wherein the conductive oxide layer is in ohmic contact with the n-layer.

39. The method as recited in claim 22, wherein the n+ layer cooperates with at least one of the n-type layer and the p-type layer to define a tunneling diode.

40. The method as recited in claim 22, wherein a thickness of the oxide layer is an integer number of T, where T is $0.25\lambda$ nm/ $n_{oxide}$, $\lambda$ is the emitting wavelength of the light generated from the light emitting device, and $n_{oxide}$ is the refractive index of the oxide material.

41. The method as recited in claim 22, wherein the n+ layer is formed at a temperature of less than approximately 900 °C.

42. The method as recited in claim 22, wherein the n+ layer is formed at a temperature of between approximately 700 °C and approximately 900 °C.